

BRIGHT Lights, BIG City:

How the Most Massive Galaxies and Black Holes Live Together

California Science Content Standards

The Science Standards for Grades Six through 12 that pertain to the subject matter for this Science on Saturday presentation have been summarized here for use by teachers. The numbering and lettering that are used in the [California State Science Standards](#) have been preserved in order that teachers can refer to them in context.

Grade Eight

Focus on Physical Science

Earth in the Solar System (Earth Science)

4. The structure and composition of the universe can be learned from studying stars and galaxies and their evolution. As a basis for understanding this concept:
 - a. Students know galaxies are clusters of billions of stars and may have different shapes.

Grades Nine Through Twelve

"Standards without asterisks represent those that all students are expected to achieve in the course of their studies. Standards with asterisks represent those that all students should have the opportunity to learn."

Earth's Place in the Universe

2. Earth-based and space-based astronomy reveal the structure, scale, and changes in stars, galaxies, and the universe over time. As a basis for understanding this concept:
 - a. Students know the solar system is located in an outer edge of the disc-shaped Milky Way galaxy, which spans 100,000 light years
 - d. Students know that stars differ in their life cycles and that visual, radio, and X-ray telescopes may be used to collect data that reveal those differences.